

We Claim:

1. A method of making a core in a core box, comprising:
  - a) blowing a binder coated aggregate which hardens with removal of moisture into a cavity of a core box, the cavity being in fluid communication with an air source;
  - b) allowing air to flow through the cavity and through the binder coated aggregate for a time less than required to completely dry the binder coated aggregate, wherein partially drying the binder coated aggregate creates a core with an inner portion and a hardened shell; and
  - c) ejecting the core from the core box before the core is completely dry, the binder within the inner portion of the core containing greater than 15% moisture, the hardened shell remaining substantially intact, wherein an improved production rate of the core is achieved.
2. The method of claim 1, wherein air flows into the cavity from a bottom portion of the core box.
3. The method of claim 2, the bottom portion of the core box being an exhaust manifold.
4. The method of claim 2, the bottom portion of the core box being an exhaust manifold and hollow ejection pins.
5. The method of claim 1, wherein air flows into the cavity from a top portion of the core box.
6. The method of claim 1, wherein air flows into the cavity concurrently from a top portion and from a bottom portion of the core box.
7. The method of claim 1, the hardened shell being approximately at least 0.50 inch thick proximate ejection pins of the core box.
8. The method of claim 1, the aggregate being sand.
9. The method of claim 1, the binder being gelatin.
10. A method of making a core in a core box, comprising:

a) blowing a binder coated aggregate which hardens with removal of moisture into a cavity of a core box, the cavity being in fluid communication with an air source;

b) allowing air to flow through the cavity and through the binder coated aggregate proximate ejection pins in the core box for a time less than required to completely dry the binder coated aggregate, wherein partially drying the binder coated aggregate creates a core with an inner portion and a hardened shell, the hardened shell proximate the ejection pins of the core box being approximately at least 0.50 inch thick and containing less than 15% moisture in the binder; and

c) ejecting the core from the core box before the core is completely dry, the binder within the inner portion of the core containing greater than 15% moisture, the hardened shell remaining substantially intact, wherein an improved production rate of the core is achieved.

11. The method of claim 10, wherein air flows into the cavity from a bottom portion of the core box.

12. The method of claim 10, wherein air flows into the cavity from a top portion of the core box.

13. The method of claim 10, wherein air flows into the cavity concurrently from a top portion and from a bottom portion of the core box.

14. The method of claim 10, the aggregate being sand.

15. The method of claim 10, the binder being gelatin.

16. A method of making a sand core in a core box, comprising:

a) connecting an air source to a core box;

b) blowing gelatin coated sand into a cavity of the core box, the cavity being in fluid communication with the air source;

c) allowing air to flow into the cavity and through the gelatin coated sand for approximately 5 minutes or less, wherein partially drying the gelatin coated sand creates a core with a hardened shell proximate ejection pins of the core box, the hardened shell being approximately at least 0.50 inch thick; and

d) ejecting the sand core from the core box before the sand core is completely dry, the gelatin in the sand core containing at least 15% moisture, the hardened shell remaining substantially intact, wherein an improved production rate of the sand core is achieved.

17. The method of claim 16, wherein air flows through the gelatin coated sand for approximately 2 minutes or less at approximately 1 bar.

18. The method of claim 17, further comprising allowing air to flow into the cavity and through the gelatin coated sand for an additional 30 seconds at approximately 2 bar.

19. A method of making a sand core in a core box, the core box having a cope, a drag, and ejection pins, the cope and the drag defining a cavity, the cope including vent holes and blow holes, the drag including an exhaust manifold, the exhaust manifold, the vent holes, and the blow holes being in fluid communication with the cavity, comprising:

a) connecting an air source to the exhaust manifold;

b) blowing binder coated sand which hardens with removal of moisture into the cavity via the blow holes;

c) allowing air to flow through the exhaust manifold into the cavity for 5 minutes or less to contact the binder coated sand, wherein drying the binder coated aggregate creates a core with a hardened shell proximate the ejection pins, the hardened shell being approximately at least 0.50 inch thick

d) exhausting air through the vent holes; and

e) ejecting the core from the core box before the core is completely dry, the binder within an inner portion of the core containing greater than 15% moisture, the hardened shell remaining substantially intact, wherein an improved production rate of the core is achieved.

20. The method of claim 19, further comprising allowing air to flow through the ejection pins, the ejection pins being hollow and in fluid communication with the exhaust manifold and the cavity.

21. The method of claim 19, further comprising connecting the air source to a top portion of the core box, the cavity being in fluid communication with the top portion of

the core box, and concurrently allowing air to flow through the exhaust manifold and the top portion of the core box, wherein air from the air source flows through the exhaust manifold and the top portion into the cavity and through the binder coated sand.

22. The method of claim 19, the binder being gelatin.